

Abstract

An electrostatic drive having a plurality of mover electrodes operatively secured to a mover, and a plurality of stator electrodes operatively secured to a stator. The mover and stator are configured to move relative to each other via electrostatic force generated between the mover electrodes and the stator electrodes. The electrostatic drive includes a driver configured to place the stator electrodes in any of a number of sequential voltage states, each being defined by a combination of LO and HI voltage levels at the individual stator electrodes. Transition from one voltage state to a sequentially adjacent voltage state produces a step size of relative movement between the mover and stator. For each of the sequential voltage states, the driver is further configured to selectively vary voltage applied at one of the stator electrodes to an amount between the LO and the HI voltage levels, in order to produce a proportionally smaller step size.